

CLAIMS

What is claimed is:

Claim 1 - A vascular stent-graft for implantation into a body lumen, comprising in combination:

an elongate tube structure having at least two open ends;

said tube structure including a film of solid material;

said film having an inside surface facing a central axis of said elongate tube structure and an outside surface facing away from said central axis; and

said film being non-foraminous between said ends, such that bodily fluids passing through said tube structure are contained within said tube structure.

Claim 2 - The stent-graft of Claim 1 wherein said film includes a flexible polymeric hydrocarbon material.

Claim 3 - The stent-graft of Claim 2 wherein said film includes a parylene material.

Claim 4 - The stent-graft of Claim 1 wherein said inside surface of said film is substantially free of surface irregularities and has a smooth texture, such that fluid flow through said tube structure is only minimally impeded by said inside surface.

Claim 5 - The stent-graft of Claim 1 wherein said elongate tube structure includes at least three ends and at least two arms, said at least two arms joined together at an intersection, wherein said elongate tube structure includes a main arm having two ends and a side arm having one end, a portion of said side arm opposite said end of said side arm being joined at said intersection with said main arm between said ends of said main arm, said inside surface of said elongate tube structure continuous between said main arm and said side arm of said tube structure.

Claim 6 - The stent-graft of Claim 1 wherein said elongate tube structure includes a radially expandable support structure formed of a material distinct from a material forming said film, said radially expandable support structure formed from a material having a greater strength than said material forming said film.

Claim 7 - The stent-graft of Claim 6 wherein said radially expandable support structure is at least partially embedded within said film.

Claim 8 - The stent-graft of Claim 1 wherein a woven support structure is at least partially embedded within said film of said elongate tube structure.

Claim 9 - The stent-graft of Claim 8 wherein at least one end of said elongate tube structure is flared to have a greater width adjacent said flared end than a width of said elongate tube structure at locations spaced from said flared end.

Claim 10 - The stent-graft of Claim 1 wherein a coupling is attached to at least one of said at least two open ends of said elongate tube structure, said coupling providing a fastener for attaching said end with said coupling to a body lumen in an orientation causing fluids passing through said body lumen to pass through said elongate tube structure.

Claim 11 - The stent-graft of Claim 10 wherein said coupling includes at least a portion thereof at least partially embedded within said surface layer of said elongate tube structure.

Claim 12 - The stent-graft of Claim 11 wherein said coupling includes a collar having a circumferential groove between two circumferential flanges, said collar at least partially embedded within said surface layer of said elongate tube structure; and

wherein said coupling includes a band sized to reside within said groove and between said flanges with a wall of a body lumen located between said band and said groove.